

Please amend the claims as follows:

26. An optical recording/reproducing apparatus for recording, reproducing or erasing an information signal onto/from one of N types (where $N \geq 2$) of optical discs having first layers of different thicknesses, each type of said optical discs having at least said first layer being transparent and a second layer for storing information, said apparatus comprising:

a light emitting means for emitting a light flux; and a converging means for converging said light flux on said second layer of one of the N optical discs through said first layer as a light spot and for performing aberration correction at said light spot; and

wherein when the first layer of a first disc of said N optical discs has a thickness (d_1) smaller than a thickness (d_2) of the first layer of a second disc of said N optical discs, said converging means converges the light spot on the second layer of said first disc with a diameter (D_1) smaller than a diameter (D_2) of the light spot converged by said converging means on the second layer of said second disc, and

wherein a thickness of each of said first layers of said N types of optical discs is about 1.2mm or less.

Please add the following new claims:

29. An apparatus according to claim 26, wherein said converging means converges the light flux in accordance with the

relation $D \propto \lambda/NA$ where D is the diameter of the light spot, λ is the wavelength of the light flux emitted by said light emitting means, and NA is the numerical aperture of the optical disc loaded in said apparatus.

1) 30. An apparatus according to claim 26, wherein said first disc is of a higher recording density than that of said disc.

2) 31. An apparatus according to claim 26, wherein said light spot diameters are about $2.1 \mu\text{m}$ or less.

3) 32. An apparatus according to claim 26, wherein each of said first layers comprises a transparent substrate.

4) 33. An optical recording/reproducing system comprising:
(a) an optical recording/reproducing apparatus for recording, reproducing or erasing an information signal onto/from any one of N types (where $N \geq 2$) of optical discs having first layers of different thicknesses, each type of said optical discs having at least said first layer being transparent and a second layer for storing information, said apparatus comprising:

photo detecting means for detecting reflective light from said optical discs;

a light emitting means for emitting a light flux; and
a converging means for converging said light flux on said second layer of one of the N optical discs through said first layer as a light spot and for performing aberration correction at said light spot; and

wherein when the first layer of a first disc of said N optical discs has a thickness (d1) smaller than a thickness (d2) of the first layer of a second disc of said N optical discs, said converging means converges the light spot on the second layer of said first disc with a diameter (D1) smaller than a diameter (D2) of the light spot converged by said converging means on the second layer of said second disc, and

wherein a thickness of each of said first layers of said N types of optical discs is about 1.2mm or less;

(b) a signal processing means, responsive to one of (i) a reproduction signal, corresponding to said information signal, from said photo detecting means and (ii) receipt of recording data, corresponding to said information signal, for recording on said disk, for generating an output signal corresponding to said information signal and for performing one of a reproducing operation and a recording operation on said discs; and

(c) a system controlling means coupled to said signal processing means for controlling generation of the output signal of said signal processing means.

34. A system according to claim 33, wherein said converging means converges the light flux in accordance with the relation $D \propto \lambda/NA$ where D is the diameter of the light spot, λ is the wavelength of the light flux emitted by said light emitting means, and NA is the numerical aperture of the loaded optical disc.

35. A system according to claim ³⁰ 33, wherein said first disc is of a higher recording density than that of said disc.

36. A system according to claim ³⁰ 33, wherein said light spot diameters are about $2.1 \mu\text{m}$ or less.

37. A system according to claim ³⁰ 33, wherein each of said first layers comprises a transparent substrate.

38. An optical recording/reproducing apparatus for recording, reproducing or erasing an information signal onto/from one of N types (where $N \geq 2$) of optical discs having first layers of different thicknesses, each type of said optical discs having at least said first layer being transparent and a second layer for storing information, said apparatus comprising:

a light emitting means for emitting a light flux; and
a converging optical system including a first converging means and a second converging means, said converging optical system for converging, by employing one of said first converging means and said second converging means, a light flux on said second layer of one of said N types of optical discs and for performing aberration correction at said light flux,

wherein when the first layer of a first disc of said N optical discs has a thickness (d_1) smaller than a thickness (d_2) of the first layer of a second disc of said N optical discs, said one of said first converging means and said second converging means, which is employed by said converging optical system,

converges the light flux to a spot on the second layer of said first disc with a diameter (D₁) smaller than a diameter (D₂) of a light spot converged by the other of said first converging means and said second converging means, which is employed by said converging optical means, on the second layer of said second disc,
and

wherein a thickness of said first layers of each of said N types of optical discs is about 1.2mm or less.

36. An apparatus according to claim 38, wherein said converging means converges the light flux in accordance with the relation $D \propto \lambda/NA$ where D is the diameter of the light spot, λ is the wavelength of the light flux emitted by said light emitting means, and NA is the numerical aperture of the loaded optical disc.

37. An apparatus according to claim 38, wherein said first disc is of a higher recording density than that of said disc.

38. An apparatus according to claim 38, wherein said light spot diameters are about 2.1 μm or less.

39. An apparatus according to claim 38, wherein each of said first layers comprises a transparent substrate.

40. An optical recording/reproducing system comprising:

(a) an optical recording/reproducing apparatus for recording, reproducing or erasing an information signal onto/from any one of N types (where N ≥ 2) of optical discs having first

layers of different thicknesses, each type of said optical discs having at least said first layer being transparent and a second layer for storing information, said apparatus comprising:

a light emitting means for emitting said light flux; and a converging optical system including a first converging means and a second converging means, said converging optical system for converging, by employing one of said first converging means and said second converging means, a light flux on said second layer of one of said N types of optical discs and for performing aberration correction at said light flux,

wherein when the first layer of a first disc of said N optical discs has a thickness (d1) smaller than a thickness (d2) of the first layer of a second disc of said N optical discs, said one of said first converging means and said second converging means, which is employed by said converging optical system, converges the light flux to a spot on the second layer of said first disc with a diameter (D1) smaller than a diameter (D2) of a light spot converged by the other of said first converging means and said second converging means, which is employed by said converging optical means, on the second layer of said second disc, and

wherein a thickness of said first layers of each of said N types of optical discs is about 1.2mm or less,

(b) a signal processing means, responsive to one of (i) a reproduction signal, corresponding to said information signal,

~~from said photo detecting means and (ii) receipt of recording data, corresponding to said information signal, for recording on said disk, for generating an output signal corresponding to said information signal and for performing one of a reproducing operation and a recording operation on said discs; and~~

~~(c) a system controlling means coupled to said signal processing means for controlling generation of the output signal of said signal processing means.~~

⁴³
~~44. A system according to claim 43, wherein said converging means converges the light flux in accordance with the relation $D \propto \lambda/NA$ where D is the diameter of the light spot, λ is the wavelength of the light flux emitted by said light emitting means, and NA is the numerical aperture of the loaded optical disc.~~

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~~45. A system according to claim 43, wherein said first disc is of a higher recording density than that of said disc.~~

⁴⁵
~~46. A system according to claim 43, wherein said light spot diameters are about $2.1 \mu\text{m}$ or less.~~

⁴⁶
~~47. A system according to claim 43, wherein each of said first layers comprises a transparent substrate.~~

⁴⁷
~~48. A system comprising:~~

~~(a) an optical recording/reproducing apparatus for recording, reproducing or erasing an information signal onto/from any one of N types (where $N \geq 2$) of optical discs having first layers of different thicknesses, each type of said optical discs~~

having at least said first layer being transparent and a second layer for storing information, said apparatus comprising:

photo detecting means for detecting reflective light from said optical discs;

light emitting means for emitting a light flux; and
a converging means for converging said light flux on said second layer of one of the N optical discs through said first layer as a light spot and for performing aberration correction at said light spot; and

wherein when the first layer of a first disc of said N optical discs has a thickness (d1) smaller than a thickness (d2) of the first layer of a second disc of said N optical discs, said converging means converges the light spot on the second layer of said first disc with a diameter (D1) smaller than a diameter (D2) of the light spot converged by said converging means on the second layer of said second disc, and

wherein a thickness of each of said first layers of said N types of optical discs is about 1.2mm or less;

(b) a signal processing apparatus including:

signal processing means, responsive to one of (i) a reproduction signal, corresponding to said information signal, from said photo detecting means and (ii) receipt of recording data, corresponding to said information signal, for recording on said disk, for generating an output signal corresponding to said